FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

February 3 to February 9, 2013 (Week 06)

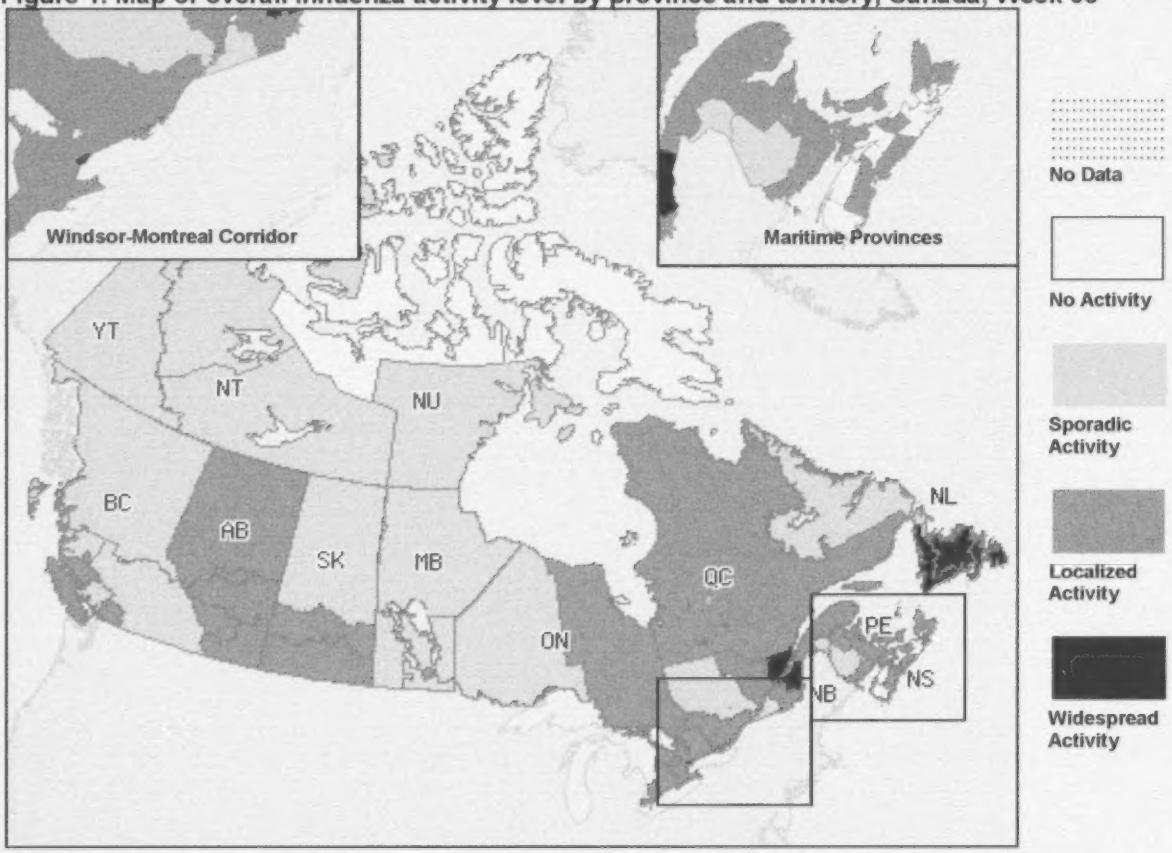
Overall Influenza Summary

- In week 06, the percentage of laboratory detections positive for influenza continued to decrease; whereas the percentage of tests positive for RSV continued to increase.
- The number of regions reporting widespread and localized influenza activity decreased, with activity primarily in central and eastern regions of Canada. Fewer new influenza/ILI outbreaks were reported compared to the past 5 weeks.
- The ILI consultation rate decreased and is now within the expected range for this time of year.
- Both the number of paediatric influenza-associated hospitalizations reported by the IMPACT network and the number of hospitalizations reported by the provinces and territories decreased.

Influenza Activity (geographic spread) and Outbreaks

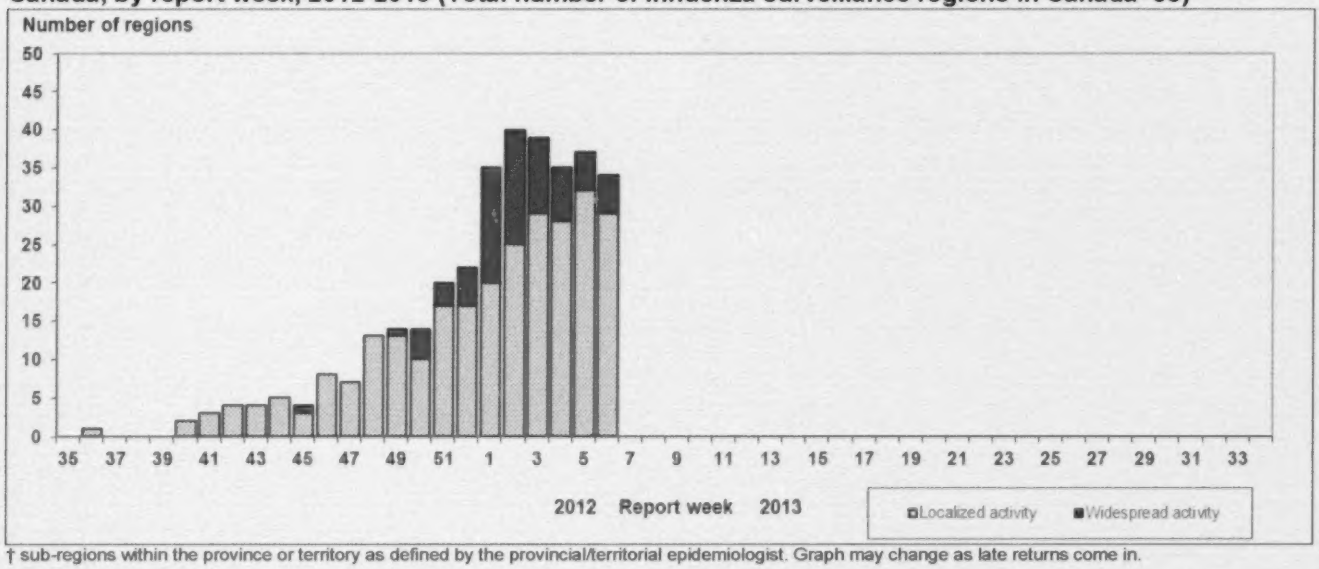
In week 06, 5 regions [in ON(1), QC(1) and NL(3)] reported widespread activity and 29 regions [in BC(2), AB(5), SK(2), MB(1), ON(5), QC(3), NB(5), NS(5), and PE(1)] reported localized activity (Figures 1 and 2). In week 06, 72 new influenza outbreaks were reported: 35 in long-term-care facilities, 3 in hospitals, 12 in schools, and 22 in other facilities or communities (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 06



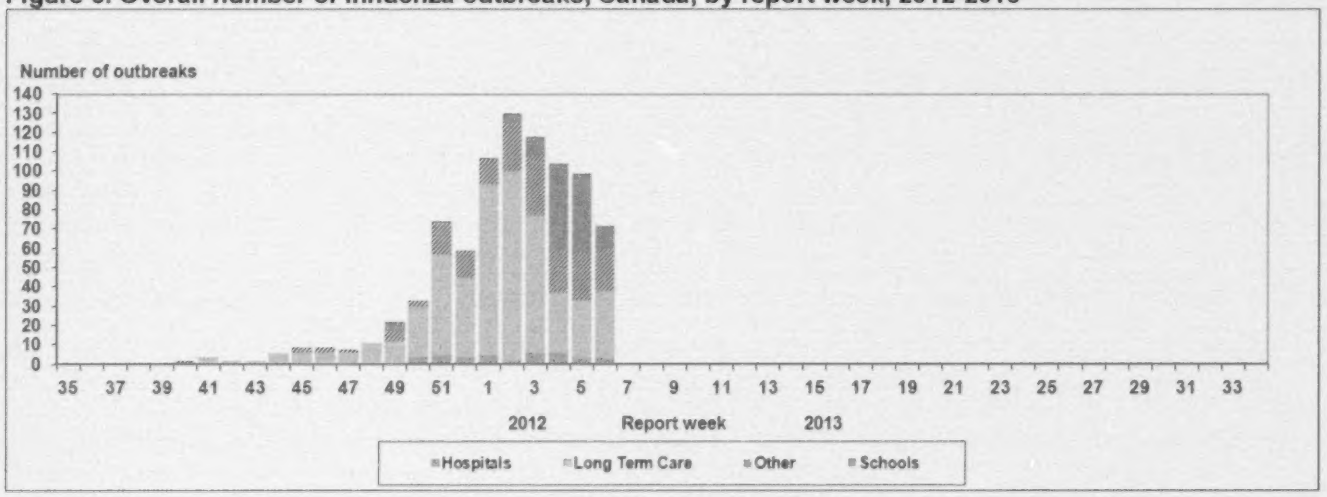
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2012-2013 (Total number of influenza surveillance regions in Canada=58)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2012-2013



Influenza and Other Respiratory Virus Detections

The percentage of positive influenza tests decreased from 23.3% in week 05 to 19.6% in week 06 (Figure 4). Among the influenza viruses detected in week 06 (n=1,149), 90.7% were positive for influenza A viruses [of which 32.1% were A(H3), 7.6% were A(H1N1)pdm09, and 60.3% were A(unsubtyped)]. Although influenza B remains a very small percentage of laboratory detections, the proportion has increased over the past 3 weeks from 2.1% in week 03 to 9.3% in week 06 (Table 1). Cumulative influenza virus detections by type/subtype to date are as follows: 96.8% influenza A [35.5% A(H3), 2.9% A(H1N1)pdm09 and 61.6% A(unsubtyped)] and 3.2% influenza B (Table 1).

Detailed information on age and type/subtype was received for 18,920 cases to date this season (Table 2). The proportion of cases by age group were as follows: 13.1% were < 5 years; 7.8% were between 5-19 years; 15.2% were between 20-44 years; 16.6% were between 45-64 years of age; 47.3% were ≥ 65 years.

The percentage of tests positive for RSV continued to increase from 17.6% in week 05 to 19.9% in week 06. The percentage of tests positive for rhinovirus decreased from 6.5% in week 05 to 5.3% in week 06. The percentage of tests positive for coronavirus also decreased from 5.3% in week 05 to 4.8% in week 06. Other percentages of positive tests remained low in week 06: parainfluenza increased to 2.7%; hMPV increased to 2.4%; adenovirus decreased to 0.8% (Figure 5). For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly and Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2012-2013

Reporting provinces	Weekly (February 3 to February 9, 2013)						Cumulative (August 26, 2012 to February 9, 2013)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	250	0	142	24	84	30	1886	0	1419	148	319	161
AB	83	0	38	24	21	14	2174	0	1741	286	147	164
SK	32	0	7	7	18	19	727	0	460	17	250	74
MB	38	0	3	1	34	1	537	0	78	4	455	35
ON	184	0	83	19	82	13	7396	0	3533	205	3658	151
QC	167	0	4	3	160	30	9254	0	541	23	8690	186
NB	144	0	0	0	144	0	1174	0	428	15	731	3
NS	66	0	57	1	8	0	186	0	124	1	61	2
PE	12	0	1	0	11	0	78	0	47	3	28	1
NL	66	0	0	0	66	0	593	0	152	0	441	4
Canada	**1042**	**0**	**335**	**79**	**628**	**107**	**24005**	**0**	**8523**	**702**	**14780**	**781**

*Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2012-2013*

Age groups	Weekly (February 3 to February 9, 2013)					Cumulative (Aug. 26, 2012 to February 9, 2013)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	63	10	7	46	19	2354	121	796	1437	133
5-19	27	1	3	23	24	1321	44	597	680	152
20-44	70	4	6	60	13	2760	180	1099	1481	121
45-64	75	13	11	51	11	3046	178	1101	1767	91
65+	188	2	34	152	7	8822	60	3328	5434	120
Unknown	5	4	1	0	0	156	15	139	2	0
Total	**428**	**34**	**62**	**332**	**74**	**18459**	**598**	**7060**	**10801**	**617**

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive, Canada, by report week, 2012-2013

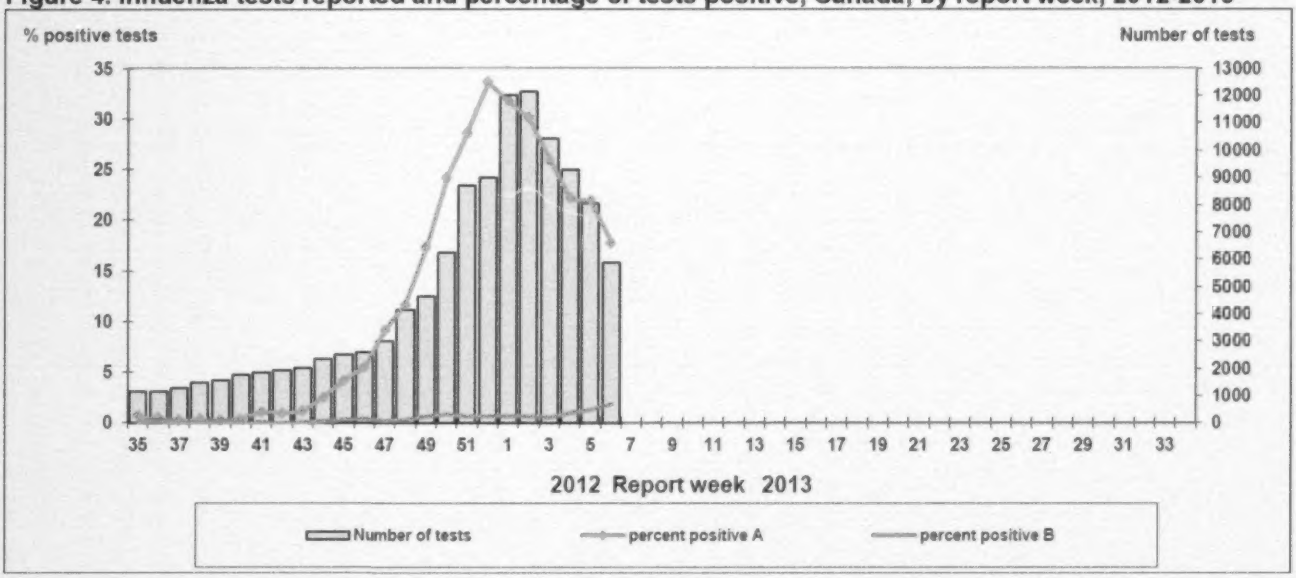
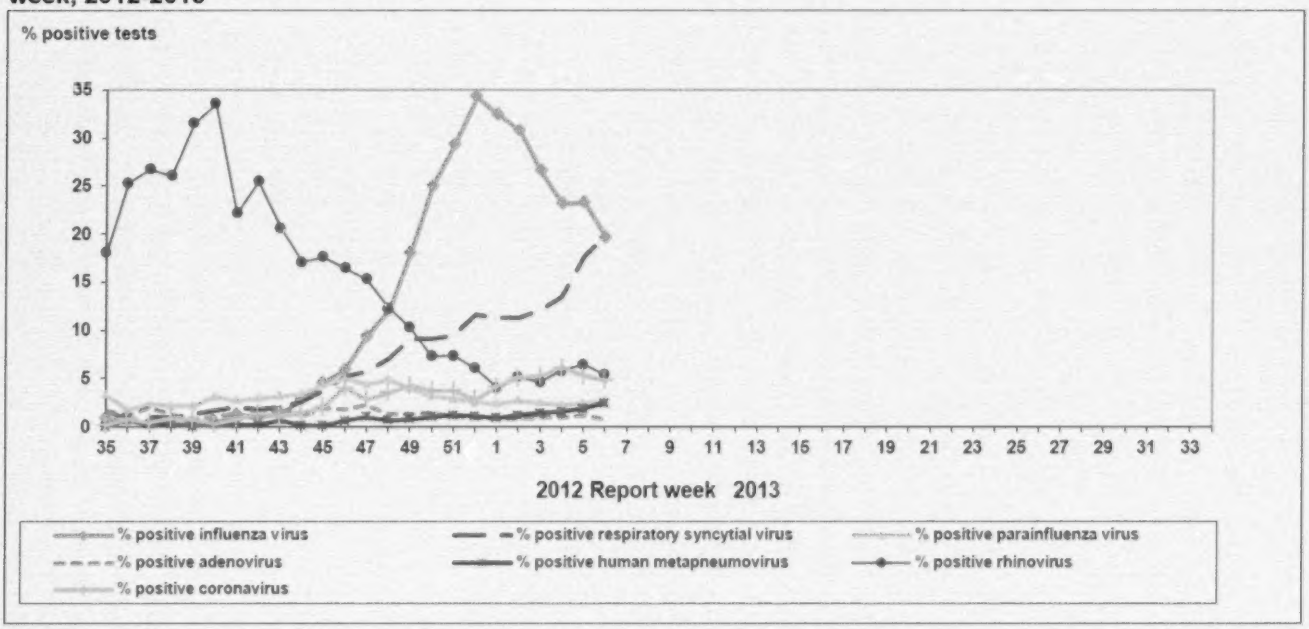


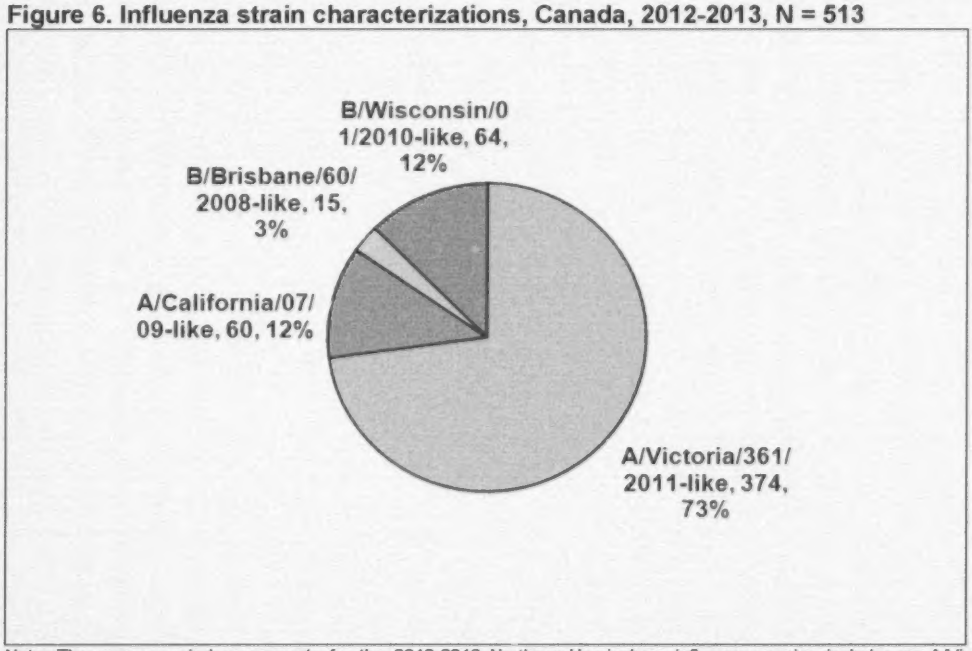
Figure 5. Percent positive influenza tests, compared to other respiratory viruses, Canada, by reporting week, 2012-2013



Influenza Strain Characterizations

During the 2012-13 season, the National Microbiology Laboratory (NML) has antigenically characterized 513 influenza viruses. The 374 influenza A(H3N2) viruses were antigenically similar to the vaccine strain A/Victoria/361/2011 and the 60 A(H1N1)pdm09 viruses were antigenically similar to the vaccine strain A/California/07/09. Among the influenza B viruses, 64 were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage) and 15 were similar to B/Brisbane/60/2008 (Victoria lineage; component of the 2011-2012 seasonal influenza vaccine) (Figure 6).

Figure 6. Influenza strain characterizations, Canada, 2012-2013, N = 513



Note: The recommended components for the 2012-2013 Northern Hemisphere influenza vaccine include: an A/Victoria/361/2011 (H3N2)-like virus; an A/California/7/2009 (H1N1)pdm09-like virus; and a B/Wisconsin/1/2010-like virus.

Antiviral Resistance

During the 2012-13 season, NML has tested 447 influenza viruses for resistance to oseltamivir, and 444 influenza viruses for resistance to zanamivir. All viruses tested were sensitive to oseltamivir and zanamivir. A total of 562 influenza A viruses were tested for amantadine resistance and all were resistant (Table 3).

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2012-2013

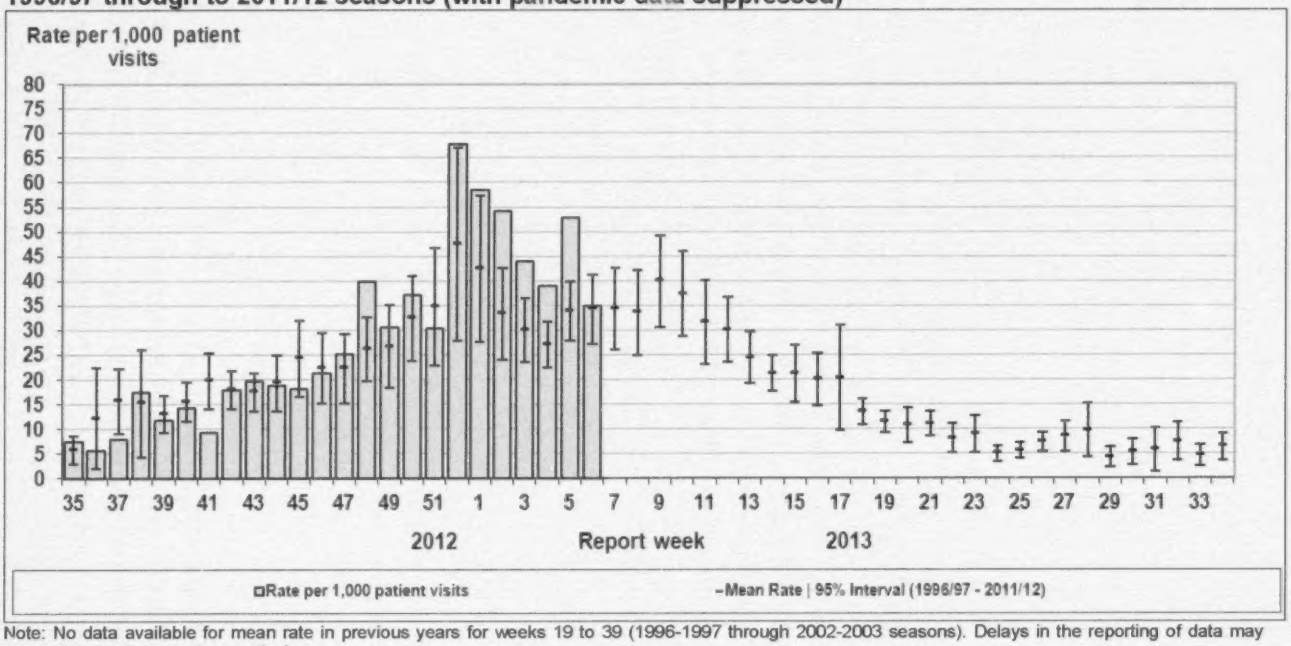
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	319	0	318	0	511	511 (100%)
A (H1N1)	57	0	55	0	51	51
B	71	0	71	0	NA*	NA*
TOTAL	447	0	444	0	562	562 (100%)

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate decreased from 52.8 ILI consultations per 1,000 patient visits in week 05 to 34.9 in week 06. After 6 weeks with ILI rates above the expected level for this time of year, the rate in week 06 is within the expected range (Figure 7). In week 06, the highest consultation rate was observed in children 5-19 years of age (62.8/1,000) followed by nearly identical rates for children <5 years of age (30.9/1,000) and adults 20-64 years of age (30.0/1,000).

Figure 7. Influenza-like illness (ILI) consultation rates, Canada, by report week, 2012-2013 compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Pharmacy Surveillance

The Canadian antiviral prescription rate decreased from 186.3 antiviral prescriptions per 100,000 new prescriptions dispensed in week 05 to 151.7 in week 06; which continues to follow the downward trend in the percentage of positive laboratory tests for influenza. In week 06, the antiviral prescription rate increased for infants, and decreased for other age-groups. The highest rate continued to be observed for seniors ≥65 years of age, which decreased in week 06 to 453.8/100,000.

Note: Pharmacy sales data are provided to the Public Health Agency of Canada by Rx Canada Inc. and sourced from major retail drug chains representing over 3,000 stores nationwide (excluding Nunavut) in 85% of Health Regions. Data provided include the number of new antiviral prescriptions (for Tamiflu and Relenza) and the total number of new prescriptions dispensed by Province/Territory and age group.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)

In week 06, 38 new laboratory-confirmed, influenza-associated paediatric (≤16 years of age) hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network, compared to 48 in week 05. Among the 30 cases identified with influenza A, 24 (80.0%) were A(unsubtyped), 2 (6.7%) were A(H3N2) and 4 (13.3%) were A(H1N1)pdm09. Eight cases (21.1%) were identified with influenza B. The age distribution is as follows: 7 cases (18.4%) under 6 months of age, 6 (15.8%) between 6-23 months, 15 (39.5%) 2-4 years of age, 8 (21.1%) 5-9 years of age, and 2 (5.3%) 10-16 years of age. Three ICU admissions were reported during this week.

Since the start of the 2012-13 season, a total of 576 influenza-associated paediatric hospitalizations have been reported by the IMPACT network: 540 (93.8%) with influenza A [of which 66 (12.2%) were A(H3N2), 14 (2.6%) were A(H1N1)pdm09 and 460 (85.2%) were A(unsubtyped)], and 36 (6.3%) with influenza B. The distribution of cases by age group is as follows: 120 (20.8%) <6 months of age; 132 (22.9%) age 6-23 months; 175 (30.4%) age 2-4 years; 98 (17.0%) age 5-9 years; and 51 (8.9%) age 10-16 years. Fifty of the 576 cases (8.7%) were admitted to the ICU. No deaths have been reported to date.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada.

Adult Influenza Hospitalizations and Deaths (PCIRN)

In week 06, 40 new laboratory-confirmed influenza-associated adult (≥16 years of age) hospitalizations were reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network, compared to 67 in week 05. Of the 39 cases with age information, the distribution is as follows: 24 cases (61.5%) were ≥65 years of age, 10 cases (25.6%) were 45-64 years of age, and 5 cases (12.8%) were 20-44 years of age. Thirty-six cases were identified with influenza A(unsubtyped), two cases with influenza B, and two cases have yet to report the influenza type. Three ICU admissions were reported during the current week, two with influenza A(unsubtyped) and one with influenza B. Of the ICU admissions, one individual was ≥65 years of age, one 45-64 years of age, and one 20-44 years of age. Two deaths were reported, both were ≥65 years of age with influenza A(unsubtyped).

From November 4, 2012 to February 9, 2013, a total of 1,057 influenza-associated adult hospitalizations were reported by the PCIRN-SOS network: 1,001 (94.7%) with influenza A [of which 121 (12.1%) were A(H3N2), 5 (0.5%) were A(H1N1)pdm09, and 875 (87.4%) were A(unsubtyped)]; 23 (2.2%) with influenza B, and the type has not been reported for 33 (3.1%) cases. Among 1,056 with available data, the distribution of cases by age group is as follows: 721 cases (68.3%) were aged ≥65 years, 218 cases (20.6%) were aged 45-64 years, 113 cases (10.7%) were aged 20-44 years, and 4 cases (0.4%) were <20 years of age. Ninety-one of the 1,057 (8.6%) were admitted to the ICU; the majority of which were persons ≥65 years of age (58.2%). Of the 91 ICU admissions, 27 (29.7%) had at least one co-morbidity, 2 (2.2%) had no co-morbidities, and 62 (68.1%) had no information to date. A total of 45 deaths have been reported, 4 (8.9%) with influenza A(H3N2), 39 (86.7%) with influenza A(unsubtyped), one with influenza B (2.2%), and one (2.2%) with influenza untyped. Thirty-nine of the 45 deaths (86.7%) were in adults ≥65 years of age, five (11.1%) were adults 45-64 years of age, and one (2.2%) was 20-44 years of age. Eighteen deaths occurred in individuals who had at least one co-morbidity. Detailed clinical information on co-morbidities is not known for the remaining 27 cases.

Note: The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada.

Provincial/Territorial Influenza Hospitalizations and Deaths (Aggregate Surveillance System)

The number of laboratory confirmed influenza associated hospitalizations continued to decline in week 06 (251 compared to 275 in week 05*). The majority of cases were influenza A (94.4%), predominately A(H3). Over half of cases were ≥65 years of age (131/251, 52.9%). Of the 82 cases with available data, 17 (20.7%) were admitted to the Intensive Care Unit (ICU). Twelve deaths were reported: 10 were adults ≥65 years of age; one 45-64 years of age and one 20-44 years of age. It is important to note that the cause of death does not have to be attributable to influenza, a positive laboratory test is sufficient for reporting. Detailed clinical information (e.g. underlying medical conditions) is not known for these cases.

To date this season, 3262 influenza-associated hospitalizations have been reported. Of these, 97.2% have been influenza A, predominately A(H3); and 2.8% have been influenza B. Age information was available for 3260 cases, and the age distribution is as follows: 57.4% ≥65 years; 16.4% 45-64 years; 8.5% 20-44 years; 1.0% 15-19; 3.3% 5-14 years and 13.3% 0-4 years of age. Among the 836 cases with available data, there have been 127 (15.2%) hospitalisations for which admission to ICU was required; the highest proportions were among adults aged 45-64 years of age (37.0%), and ≥65 years of age (34.6%). To date this season, 217 deaths have been reported: 180 (83.0%) were persons ≥65 years of age, 25 (11.5%) were adults 45-64 years; 7 (3.2%) were adults 20-44 years and 5 (2.3%) were children 0-4 years of age. It is important to note that the cause of death does not have to be attributable to influenza, a positive laboratory test is sufficient for reporting. Detailed clinical information (e.g. underlying medical conditions) is not known for these cases.

Note*: The number of new influenza-associated hospitalizations and deaths reported by the Aggregate Surveillance System each week may be overestimated, as it may include retrospective updates to data from Ontario for previous weeks. These data may also include cases reported by the IMPACT and PCIRN networks. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not reported in Ontario.

International Influenza Updates

WHO: No new influenza surveillance update has been published since 1 February 2013.
World Health Organization influenza update

United States: During week 06, influenza activity remained high, but decreased in most areas. Thirty-one states reported widespread influenza activity, Puerto Rico and 14 states reported regional influenza activity, and the District of Columbia and 4 states reported local activity. The national percentage of outpatient visits for ILI was 3.2% which is above the national baseline of 2.2%. All 10 regions reported ILI above region-specific baseline levels, and 11 states and New York City experienced high ILI activity. During week 06, the percentage of deaths due to pneumonia and influenza was 9.1%, which is above the epidemic threshold of 7.6%. The proportion of tests positive for influenza viruses declined to 19.7% in week 06. Of the positive influenza detections, 66.2% were positive for influenza A viruses. Of the 488 influenza A viruses for which subtype information was available, 92.0% were A(H3). Since October 1, 2012, the CDC has antigenically characterized 1,088 influenza viruses. Among influenza A(H3N2) viruses, 673 (99.4%) were A/Victoria/361/2011-like, and 4 (0.6%) showed reduced titers to A/Victoria/361/2011 antiserum. Among influenza A(H1N1)pdm09 viruses, all 86 were A/California/7/2009-like. Among influenza B viruses, 230 (70.8%) were B/Wisconsin/01/2010-like belong to the Yamagata lineage of viruses; and 95 (29.2%) to the B/Victoria lineage. Two (0.9%) oseltamivir-resistant A(H1N1)pdm09 viruses have been reported to date this season. Among the 8,953 influenza-associated hospitalizations reported to date this season, 86.6% were associated with influenza A of which 97.6% were A(H3N2), and more than 50% were among adults ≥65 years. Forty-four percent of hospitalized children had no identified underlying medical conditions.
Centers for Disease Control and Prevention seasonal influenza report

Europe: In week 06, most countries in the region report medium intensity levels of ILI and ARI and widespread circulation of influenza. All countries with established thresholds reported ILI and ARI consultation rates above their national threshold levels. The percentage of specimens from sentinel clinics positive for influenza remained high at 51%. Influenza activity continued to move from west to east, with A(H1N1)pdm09 the predominant strain. The proportion of influenza virus types has been consistent since week 47: 69% were influenza A and 31% were influenza B; 72% of subtyped influenza A viruses were A(H1N1)pdm09 and 28% were A(H3N2). Among influenza B viruses, 90% belonged to the Yamagata lineage and 10% to the Victoria lineage. Influenza A is predominant in northern, eastern and central regions while influenza B is reported as predominant in southern and western regions, and the UK (Northern Ireland).
EuroFlu weekly electronic bulletin

Human Avian and Swine Influenza Updates

Human Avian Influenza
Between 16 January and 15 February 2013, the WHO reported 10 new human cases of infection with influenza A(H5N1) from Cambodia (7), Egypt (1) and China (2). Six deaths were reported among the seven Cambodian cases. These cases do not appear to be epidemiologically linked and most cases had contact with sick poultry. The two cases in China were in critical condition, and do not appear to be epidemiologically linked. Neither had documented contact with sick or dead poultry. Of the 10 cases, there were four adults 20-44 years of age, one child 15 years of age, three children 3-10 years of age, and two children under 2 years of age.
WHO Influenza at the human-animal interface

Human Swine Influenza

No new human cases of infection with swine influenza viruses or variants were reported in week 06.

Centers for Disease Control and Prevention seasonal influenza report

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2012-2013 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2012-2013 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2012-2013 season

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles.